

# SAFETY BULLETIN

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## PHOTOGRAPHIC FIXER and CHEMICAL DISPOSAL

**PLEASE POST**

*Darkroom users please take note*

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Silver is a heavy metal which, in concentrations exceeding 5 ppm, is regulated by the EPA under Resource Conservation and Recovery Act (RCRA) as hazardous waste. Image processing is, by far, the major source of silver-containing wastes produced at AECOM.

Photographic paper and x-ray film have an emulsion of fine silver halide crystals which is released in excess in the fixer solution. Basically, the fixer stops the chemical reaction initiated by the developer and the undeveloped silver is released by the film and dissolves in the fixer. Fixer used for gel radiography and other film developing procedures will generate enough silver in concentrations which prohibits drain disposal.

Laboratories have two options for disposal of used fixer solutions:

1. Run spent fixer through a silver recovery unit which makes the waste non-hazardous by reducing the amount of silver in the solution. Once the material has gone through a silver recovery unit the waste is acceptable for drain disposal.
2. Collect, label, and dispose used fixer via EH&S.



Since most of the machines here at AECOM are automatic processors, silver recovery equipment using metallic replacement cartridges, is recommended. The KODAK Chemical Recovery Cartridge, Junior Model II, is an example of this silver recovery equipment, used for the removal of silver from fixer solutions. These cartridges are simple to use and maintain, and generally need to be replaced every 6 months. Used cartridges may be labeled and disposed via EH&S or recycled via a silver recovery vendor. Also, all unused, concentrated photographic materials must be labeled as hazardous waste and disposed by EH&S.

To purchase or install a silver recovery unit, consult with your manufacture. If you have any questions regarding waste disposal, call EH&S at x3560.